Surface Water Monitoring Plan

Cawelo Water District Coalition

General Order R5-2013-0120

October 22, 2014

Surface Water Monitoring Plan

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Executive Summary

The new General Order No. R5-2013-0120, Waste Discharge Requirements General Order for Growers within the Tulare Lake Basin Area that are Members of a Third-Party Group was adopted by the State of California Central Valley Regional Water Quality Control Board on September 19, 2013 and replaced the previous Order No. R5-2006-0053, Coalition Group Conditional Waiver of Waste Discharge Requirements from Irrigated Lands or alternatively known as the Ag Waiver Program.

Under the Ag Waiver Program the Southern San Joaquin Valley Water Quality Coalition (SSJVWQC) was the third-party group representing growers that had the potential to discharge irrigation water to surface waters of the State. The SSJVWQC included four sub-watersheds, the Kaweah River, Kern River, Kings River and Tule River, that conducted their respective surface water monitoring obligations per the SSJVWQC Monitoring and Reporting Program. Reports and data submissions were consolidated and submitted by the SSJVWQC

Under the new General Order, the Cawelo Water District Coalition (CWDC) received a Notice of Applicability (NOA) from the Central Valley Regional Water Quality Control Board (Regional Board) dated April 25, 2014 authorizing CWDC to act as the third-party group or coalition representing growers in the water district boundary area for compliance under the new General Order.

One requirement or component of the new General Order is developing and submitting a new Surface Water Monitoring Plan to replace the previous Monitoring and Reporting Program (MRP) implemented under the Ag Waiver Program. The monitoring objectives of this Surface Water Monitoring Plan is to provide sufficient data to describe irrigated agriculture's impacts on surface water quality for waters of the State in the CWDC area and to determine whether existing or newly implemented management practices comply with the surface water receiving limitations of the General Order.

Within the CWDC area, several different surface waterways were evaluated and considered for monitoring the potential impacts of irrigated agriculture. Ultimately it was determined that two monitoring stations would be established on Poso Creek in the CWDC area:

Poso Creek at Hwy 65 Monitoring Station
Poso Creek at Fwy 99 Monitoring Station

These two new monitoring stations will replace the previous Poso Creek at Zerker Road Monitoring Station and are classified as Core Monitoring sites. The monitoring parameters are similar to those established in the previous MRP and are provided in Appendix B.

All SWMP reporting and data submittals will be provided according to the specification of the General Order.

Additionally, a Quality Assurance and Project Plan submittal is a required at the time of the SWMP submittal and is included as part of the SWMP in Appendix C.

I. General Overview

The Cawelo Water District Coalition (CWDC) received a Notice of Applicability (NOA) from the Central Valley Regional Water Quality Control Board (Regional Board) dated April 25, 2014 authorizing CWDC to act as the third-party group or coalition representing growers in the water district boundary area for compliance under Order No. R5-2013-0120, Waste Discharge Requirements General Order for Growers within the Tulare Lake Basin Area that are Members of a Third-Party Group (General Order). A revised NOA was issued on August 22, 2014 making a minor adjustment to the previous delineated boundary.

It is specified in the General Order that all third-party groups must submit a Surface Water Monitoring Plan (SWMP) in accordance with the requirements of the General Order and it be submitted to the Regional Board within 180 days of receiving the NOA. CWDC is required to submit a SWMP by October 24, 2014.

As described in the General Order, the SWMP is to provide sufficient data to describe irrigated agriculture's impacts on surface water quality and to determine whether existing or newly implemented management practice comply with the surface water limitations of the General Order. This includes a description and rationale for monitoring site locations, monitoring schedules, and parameters to be monitored along with other factors.

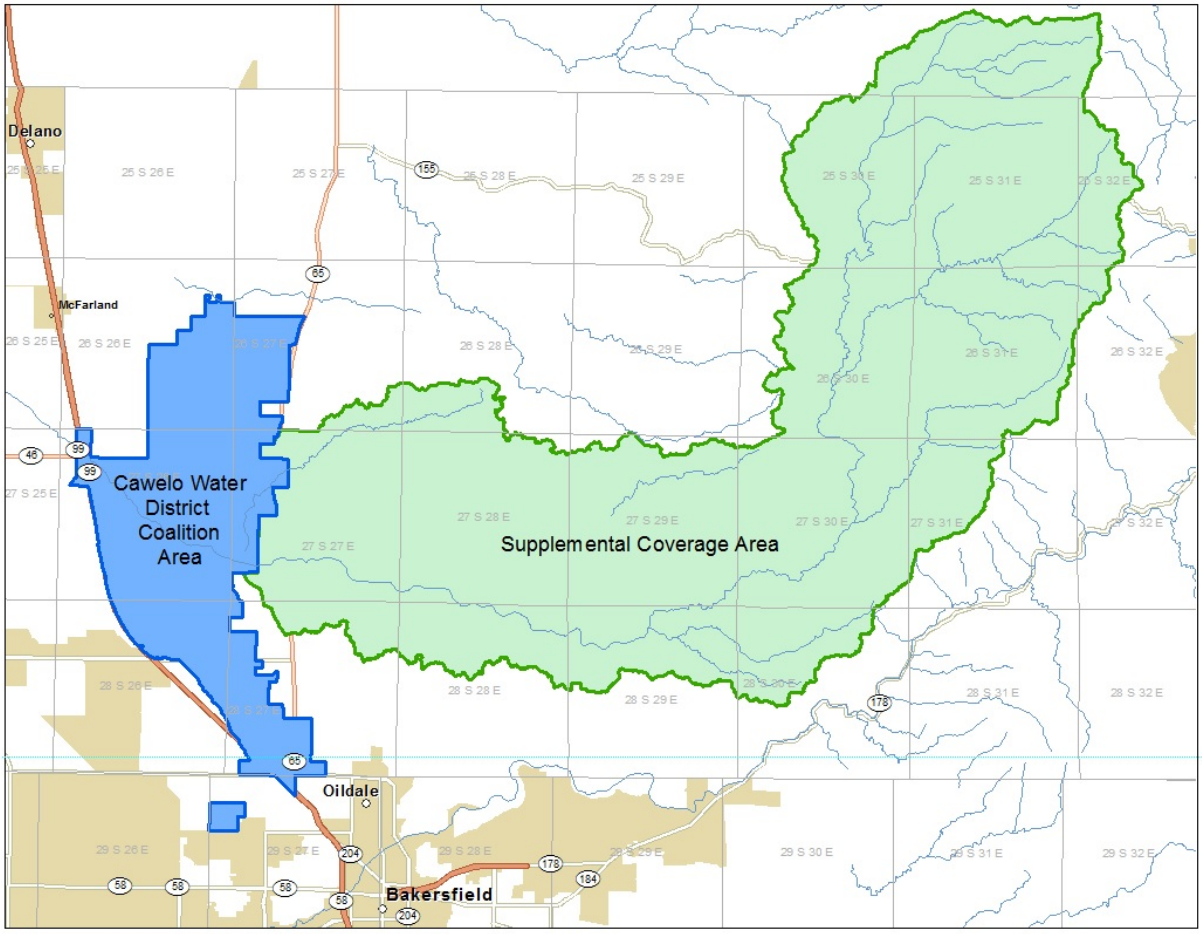
A. Coalition Area

The CWDC coverage area is essentially the Cawelo Water District boundary. The CWDC coverage area encompasses approximately 45,000 acres and is located in the north-central portion of Kern County, between U.S. Highway 99 on the west and State Highway 65 on the east, Oildale on the south and the community of McFarland to the north. Poso Creek traverses the CWDC coverage area bifurcating it into approximately two halves to the north and the south.

The CWDC also provides coverage for growers in an additional Supplemental Coverage Area (SCA) which encompasses the upstream portion of the Poso Creek watershed to the east of the CWDC area. The SCA is approximately 200,000 acres with very little or no irrigated agriculture.

Figure 1 illustrates the CWDC and the SCA coverage area locations and boundaries.

FIGURE 1 – Cawelo Water District Coalition & Supplemental Coverage Area



B. Kern County Groundwater Subbasin

The CWDC coverage area lies entirely within the Kern County Groundwater subbasin area which is one of 7 subbasins of the San Joaquin Valley Groundwater Basin. The Kern County Groundwater subbasin is bounded on the north by the Kern County line and the Tule Groundwater subbasin, on the east and southeast by granitic bedrock of the Sierra Nevada foothills and Tehachapi mountains, and on the southwest and west by the marine sediments of the San Emigdio Mountains and Coast Ranges. The Kern River and Poso Creek are the primary natural waterways in the subbasin area.

The San Joaquin Valley Groundwater Basin is one of the 12 distinct groundwater basins in the Tulare Lake Hydrological Region. The hydrological region covers approximately 10.9 million acres and includes all of Kings and Tulare counties and most of Fresno and Kern counties. The region includes the southern half of the San Joaquin Valley, the Temblor Range to the west, the Tehachapi Mountains to the south, and the Sierra Nevada to the east.

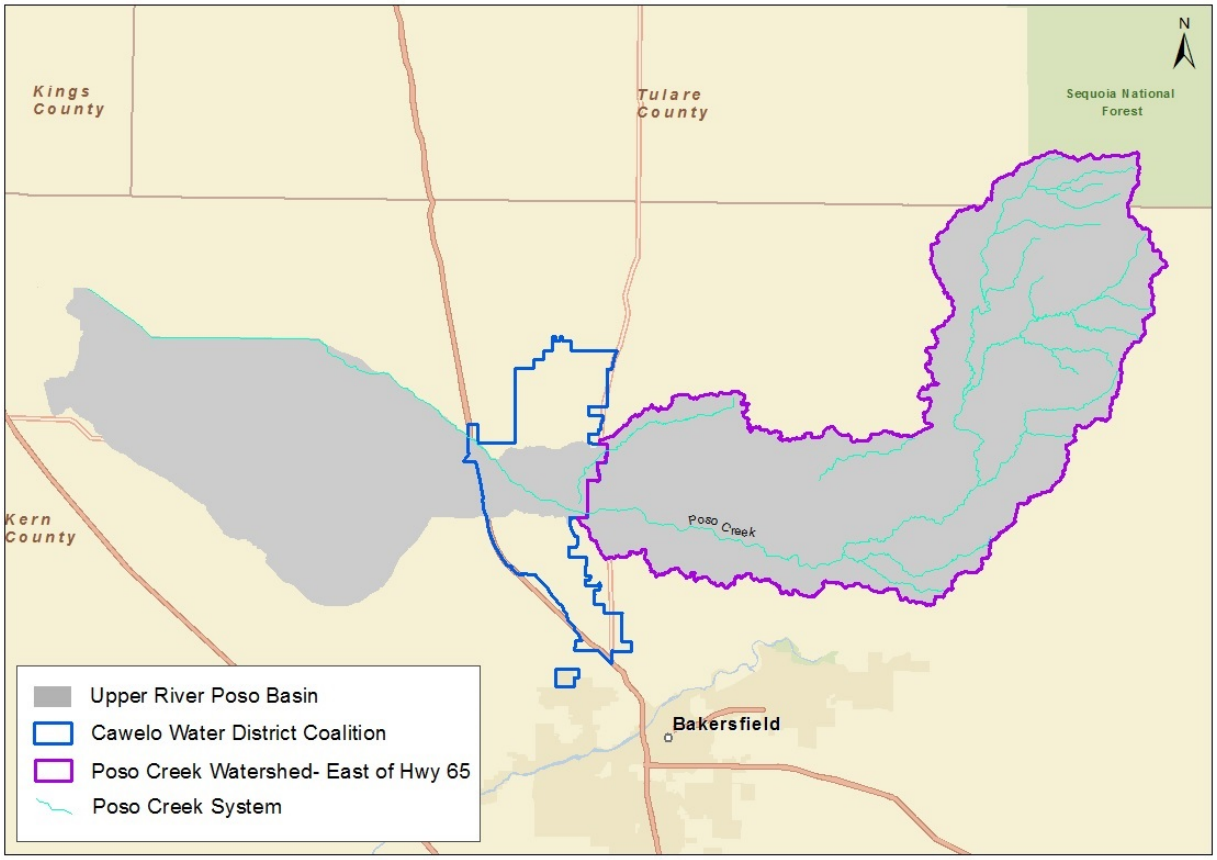
C. Poso Creek Watershed

The Upper River Poso Basin covers more than 300,000 acres and drains southwest into the central valley near Famoso in Kern County and then north towards the old Tulare lakebed. The terrain ranges from deep v-shape canyons with steep rugged terrain to moderate slopes at lower elevations. East of Highway 65 the Poso Creek Watershed covers approximately 210,000 acres.

Poso Creek is an intermittent stream that traverses CWDC and enters the KRWCA's coverage area. During wet years Poso Creek flows can reach the Kern National Wildlife Refuge. There are several tributaries to Poso Creek including Angel Creek, Cedar Creek, Little Poso Creek, Rattlesnake Creek, and Little Creek.

Figure 2 illustrates the Upper River Poso Basin and the Poso Creek Watershed east of Hwy 65.

FIGURE 2 – Upper River Poso Basin

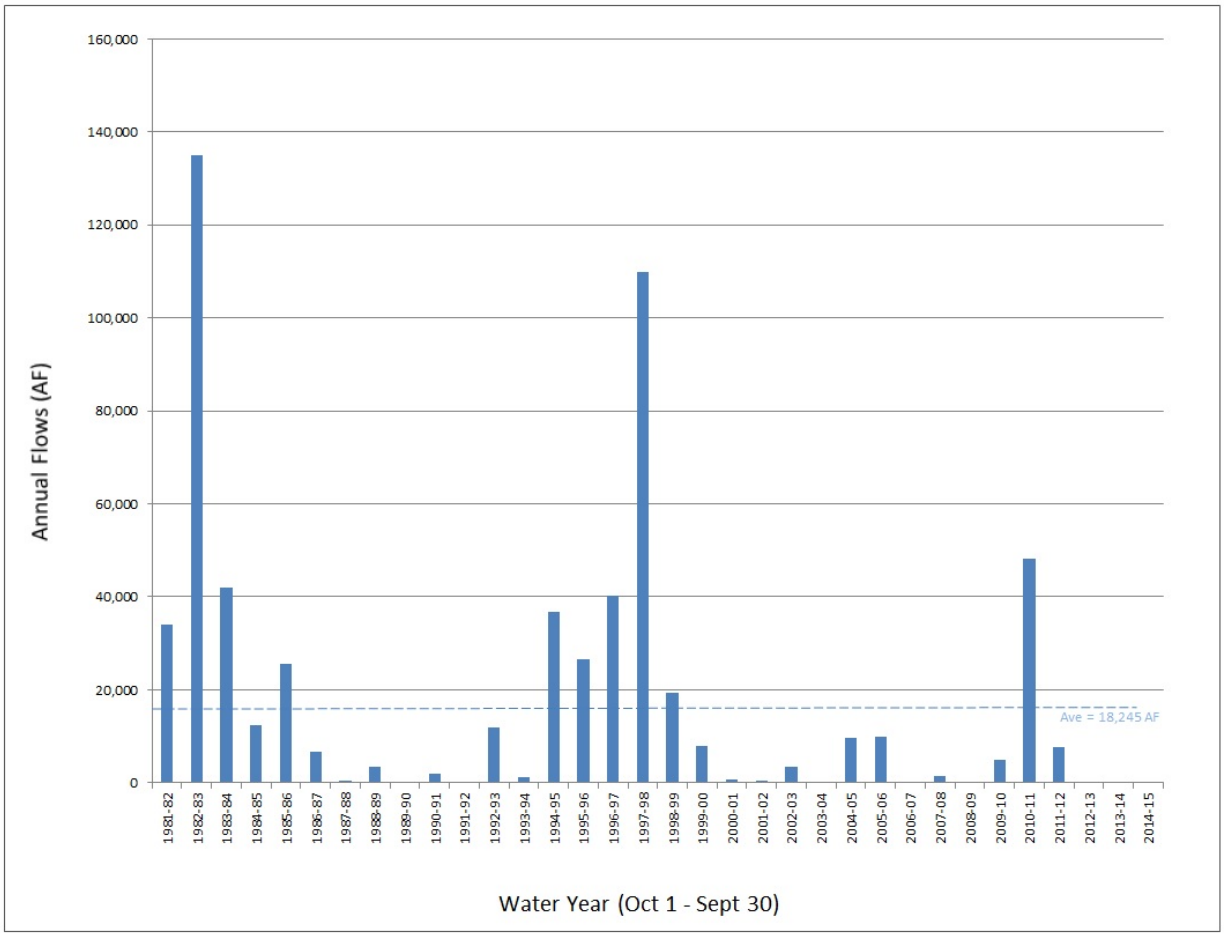


D. Hydrology

The average annual precipitation in the CWDC coverage area is approximately 6" dating back to 1998 as reported by the California Irrigation Management Information System station ID No. 138, Famoso Station. The annual average Poso Creek water flow measured at

the Trenton Weir just east of Highway 65 is 18,245 AF. A summary of the annual flows is provided in Figure 3.

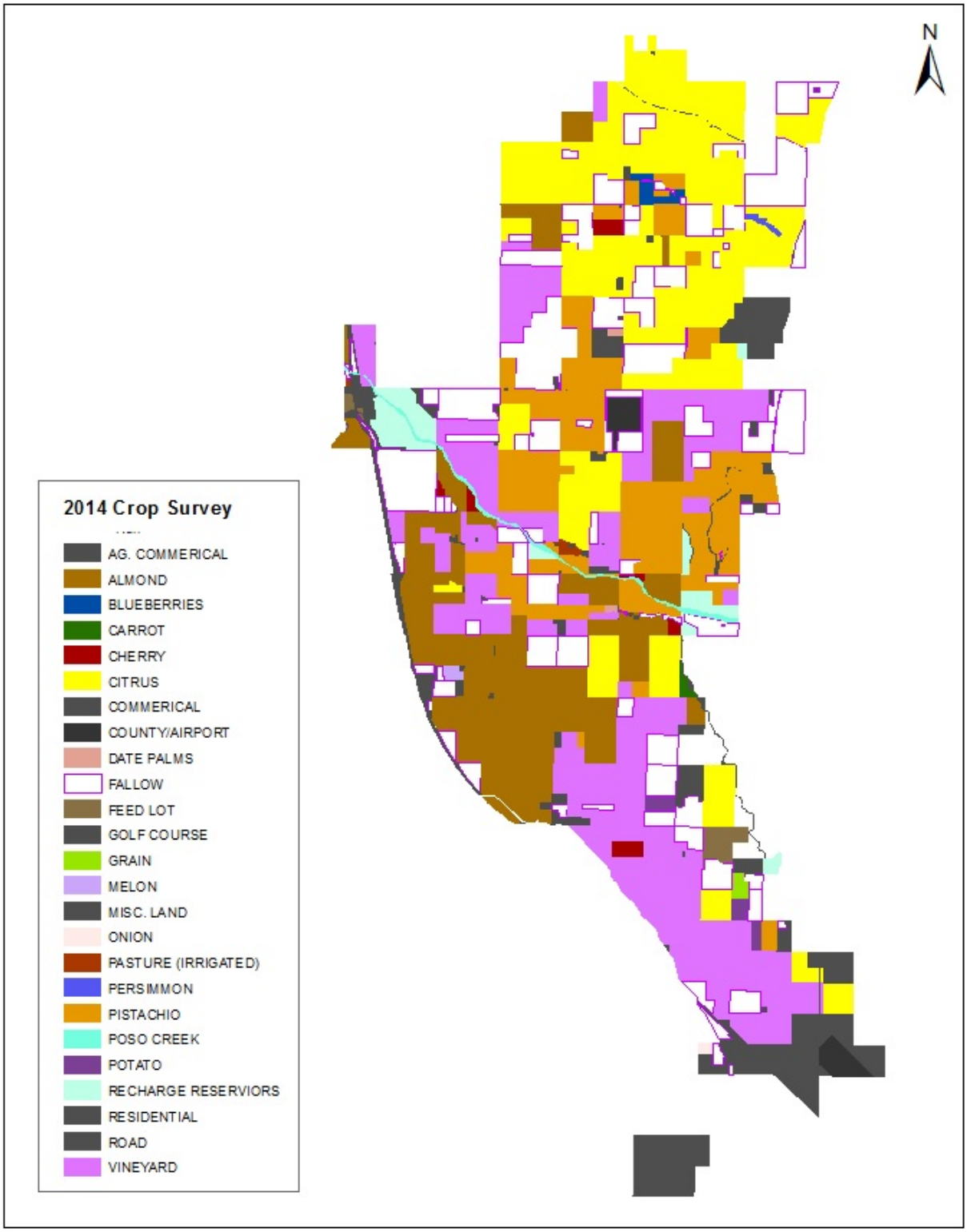
FIGURE 3 – Poso Creek Annual Flows Measured at Trenton Weir



E. Land Use

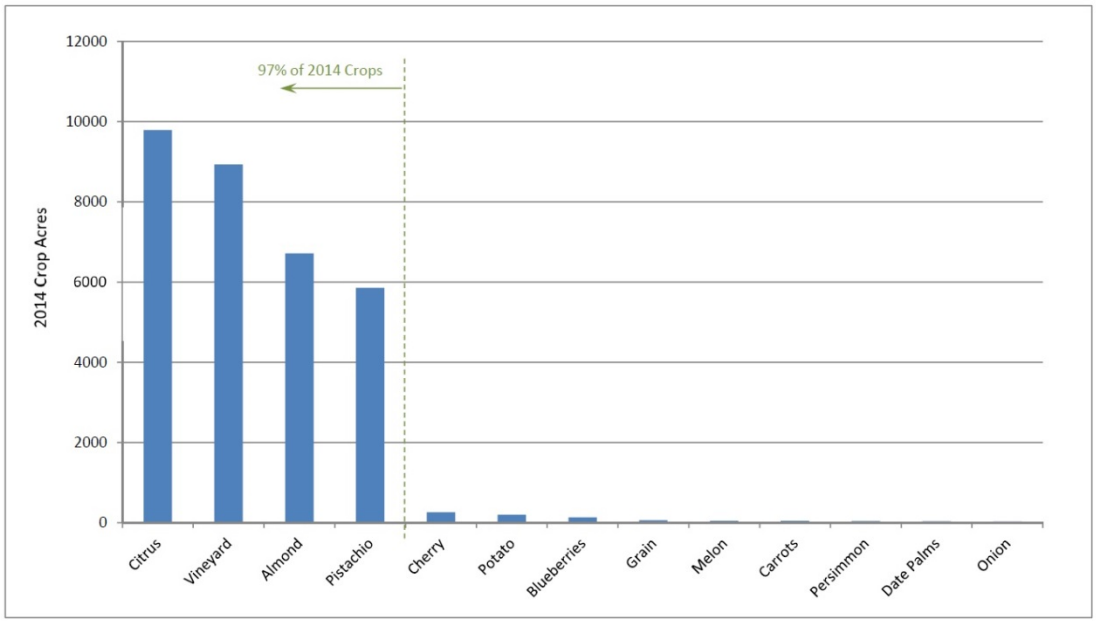
The primary land use for the CWDC area is agriculture with approximately 70% of the area being used for producing crops or about 32,000 acres for 2014. About 17% of the area is fallow and approximately 5% is used for general commercial purposes. The remaining portions are attributed to residential, roadways, reservoirs and other miscellaneous non-agricultural uses. Figure 4 is a 2014 crop map illustrating the various agriculture in the CWDC area.

FIGURE 4 – 2014 Crop Map



The primary crops grown in the CWDC area are citrus, vineyards, almonds and pistachios which are permanent crops and comprise 97% of the total crops grown in the CWDC area for 2014. The crop acres are summarized in the following Figure 5.

FIGURE 5 – 2014 Crop Acreages



II. Monitoring and Reporting Program

A. Previous Monitoring and Reporting Program

The new General Order No. R5-2013-0120, Waste Discharge Requirements General Order for Growers within the Tulare Lake Basin Area that are Members of a Third-Party Group was adopted by the State of California Central Valley Regional Water Quality Control Board on September 19, 2013 and replaced the previous Order No. R5-2006-0053, Coalition Group Conditional Waiver of Waste Discharge Requirements from Irrigated Lands or alternatively known as the Ag Waiver Program.

Under the Ag Waiver Program the Southern San Joaquin Valley Water Quality Coalition (SSJVWQC) was the third-party group representing growers that had the potential to discharge irrigation water to surface waters of the State. The SSJVWQC included four sub-watersheds, the Kaweah River, Kern River, Kings River and Tule River, that conducted their respective surface water monitoring obligations per the SSJVWQC Monitoring and Reporting Program. Reports and data submissions were consolidated and submitted by the SSJVWQC.

i. Kern River Sub-watershed

The Kern River Sub-watershed generally provided coverage for irrigated agriculture on the Southern San Joaquin Valley floor. The Sub-watershed roughly covered 2.5 million acres but only about 240,000 acres of irrigated agriculture were enrolled in the Ag Waiver Program.

Prior to CWDC receiving a NOA to operate as a third-party group under the new General Order, the growers in the CWDC area were enrolled through the Kern River Sub-watershed. The Kern County Water Agency operated as the sub-watershed program manager until 2012 at which time the Kern River Watershed Coalition Authority (KRWCA) was formed and assumed the program management responsibilities for the Ag Waiver Program.

Roughly 24,000 acres in the CWDC area were enrolled through KRWCA for surface water compliance under the Ag Waiver Program. CWDC received a NOA on April 25, 2014 and is the currently authorized third-party group representative for the Cawelo Water District area. Growers in the CWDC area that choose to be represented by a third-party group are required to enroll though CWDC and will no longer be covered by KRWCA.

ii. Poso Creek at Zerker Road Monitoring Station

There were several monitoring stations in the Kern River Sub-watershed area under the previous Monitoring and Reporting Program. The Poso Creek at Zerker Road Monitoring Station was one of them and located within the CWDC area. After the issuance of the NOA, CWDC assumed the monitoring and reporting duties for this specific station and will continue to do so until a new Surface Water Monitoring Plan is approved for the CWDC area under the new General Order.

There were no exceedance issues associated with irrigated agriculture in this area of Poso Creek or as determined by this monitoring station. Therefore there were no requirements to develop or implement a corresponding Surface Water Quality Management Plan.

B. Monitoring Objectives

The monitoring objectives of this Surface Water Monitoring Plan of the new General Order is to provide sufficient data to describe irrigated agriculture's impacts on surface water quality for waters of the State in the CWDC area and to determine whether existing or newly implemented management practice comply with the surface water receiving limitations of the General Order.

In the CWDC area Poso Creek is the only natural channel that enters the CWDC coverage area and exits into other areas that can benefit from its beneficial uses. The annual water flows entering the CWDC area were previously summarized in Figure 3. Approximately only 7 miles of Poso Creek channel reside within the CWDC area but the CWDC area is the first encountered area with irrigated agriculture that has the potential to impact water quality.

Along this section of the channel there are several miles of agriculture that front the channel on both the north and south sides and due to the terrain of the local irrigated agriculture they have the potential of surface runoff reaching the channel. Water quality monitoring is necessary for this section of Poso Creek to determine if management practices are impacting Poso Creek waters.

Little Creek is a small natural channel that is a tributary to Poso Creek and enters the CWDC area from the east and the north side of Poso Creek. It passes through approximately 2 miles of irrigated agriculture within the CWDC and joins Poso Creek within a half mile inside the east CWDC boundary edge. According to Cawelo Water District, Little Creek rarely has water flows and has had detectable flows in only 3 of the last 33 years. Due to its short run within irrigated agriculture, lack of water flow and the immediate confluence with Poso Creek just inside the CWDC east boundary, monitoring Little Creek would provide little or no data that would assist in determining irrigated agricultures impacts on its surface waters. This natural channel cannot provide sufficient data to meet monitoring objectives.

A SWMP outline was submitted on June 25, 2014 to the Regional Board and a review letter dated August 18, 2014 was provided to CWDC in response. This letter indicated the Lerdo Canal should be addressed in consideration of the effects of irrigated agriculture on surface waters within the CWDC area. The Lerdo Canal is part of a canal system that is owned by North Kern Water Storage District (NKWSD) and is roughly 25 miles long starting at the head gate of the Beardsley Canal. The head gate is located at the Kern River and the Beardsley Canal passes through approximately 3.5 miles of industrial fields before entering the urban area of Bakersfield. From there it travels another 3.8 miles through predominantly urban areas and another 1.5 miles though a non-CWDC agricultural area. At that point it crosses Seventh Standard Road and becomes the Lerdo Canal. As it continues north it enters the CWDC area for the first time for 0.7 miles then exits the CWDC area. This section of the canal lies within an area that is predominantly commercial and residential land. Then it parallels just outside the CWDC west boundary line for another 5 miles at which point it re-enters the CWDC area for less than a mile then exits CWDC and continues west to the opposite side of U.S. Highway 99. The canal continues for about 7 miles on the opposite side of U.S. Highway 99 and reaches distances of over 1 mile away from the nearest CWDC boundary. The canal and CWDC boundary converge again and borders the CWDC area for approximately 2 more miles. The canal continues north and terminates into other NKWSD canals or laterals for their agricultural needs and water management practices.

In summary, less than 2 miles of the Lerdo Canal resides entirely within the CWDC and about half of that is residential or commercial area. Well over 8 miles of the canal traverses agricultural land that is entirely within the KRWCA coverage area and about 5.5 miles of the canal parallel the CWDC boundary. Additionally, the canal is owned and operated by NKWSD and is an agricultural distribution channel. Due to the Lerdo Canal's limited exposure to agriculture within the CWDC boundaries and being owned by another entity, it is impractical for CWDC to establish monitoring stations on the Lerdo Canal with it's relatively minor exposure to CWDC agriculture. If it is determined there is a need for a Surface Water Quality Management Plan to address Lerdo Canal qualifying exceedances in the vicinity of CWDC, then CWDC will work with KRWCA in their development and implementation of the plan.

C. Selection of Monitoring Sites

As discussed in the previous section, CWDC considered several different waterways to monitor and evaluate agricultural impacts on surface waters. Within the CWDC area it has been provided that Poso Creek is a rational surface waterway that could potentially be impacted by agricultural practices. For Little Creek it is improbable that meaningful data can be derived from an established monitoring station on this channel. Due to its early confluence with Poso Creek, any unlikely potential impacts could be addressed through applicable Surface Water Quality Management Plans if necessary. Similarly for the Lerdo Canal, it is unlikely that meaningful data would be obtained regarding impacts from CWDC agriculture but CWDC will cooperate with KRWCA if they are required to develop and implement a Surface Water Quality Management Plan in the vicinity of the CWDC coverage area.

i. Poso Creek at Highway 65 Monitoring Station

This monitoring station was established to monitor the water flows entering the CWDC coverage area where Poso Creek first encounters irrigated agriculture. This station provides an opportunity to determine a baseline for water quality entering the CWDC area.

This station is located at the Highway 65 Bridge crossing at Poso Creek. It is approximately 0.7 miles east of the CWDC eastern boundary and corresponding agricultural operations. This location provides easy access to obtain water samples and, along with the proximity to first encounter agriculture, is an appropriate monitoring location. Additionally, the Trenton Weir is located approximately 0.3 miles upstream and is used to measure Poso Creek flows. See Figure 6 for monitoring station location.

Figure 6 – Poso Creek at Hwy 65 Monitoring Station

ii. Poso Creek at U.S. Highway 99 Monitoring Station

This monitoring station was established to monitor any potential impacts irrigated agriculture in the CWDC area could have on Poso Creek. By selecting this location at the west CWDC boundary line and incorporating the baseline information derived from the Poso Creek at Highway 65 Monitoring Station, the monitoring activities will provide sound and essential information regarding potential changes in Poso Creek water quality within the CWDC area.

This station is located on the west side of U.S. Highway 99 at Poso Creek where flows leave the CWDC area. It is approximately 100 yards west of the south bound lanes of the highway. See Figure 7 for monitoring station location.

Figure 7- Poso Creek at Fwy 99 Monitoring Station

Both the Poso Creek at Highway 65 Monitoring Station and the Poso Creek at U.S. Highway 99 Monitoring Station are new monitoring locations and will replace the previous Poso Creek at Zerker Road Monitoring Station established in the previous Monitoring and Reporting Program. Upon approval of this SWMP, all monitoring activities will cease at previous Poso Creek at Zerker Road Monitoring Station and all previously acquired data and information will be retained.

Please see Appendix A for photographs of the upstream and downstream views at each monitoring site location.

D. Monitoring Site Classifications

There are 4 monitoring site classifications as described by the General Order which are Core Monitoring, Assessment Monitoring, Ephemeral Monitoring and Special Project Monitoring.

Below are the classifications for each monitoring site:

Poso Creek at Highway 65 Monitoring Station:	**Core Monitoring Site**
Poso Creek at U.S. Highway 99 Monitoring Station:	**Core Monitoring Site**

Both sites are designated as Core Monitoring Sites but will include one year of Assessment Monitoring on a repeating 3 year cycle. Additionally, Sediment Toxicity testing and Storm Runoff Monitoring will be conducted as required by the General Order. Refer to the following section for monitoring and sampling schedules.

E. Monitoring Schedule

The Surface Water Monitoring Plan and associated reporting requirements are to be based on a calendar year.

The monitoring stations will conduct Assessment Monitoring the first year and then Core Monitoring the following 2 years. This cycle will repeat every 3 years. Pending approval of this SWMP, the first year of Assessment Monitoring will be 2015 and the following 2016 and 2017 years will be Core Monitoring years. If the SWMP is approved prior to the end of this year then the remaining balance of the year will be conducted as a Core Monitoring year. The Core or Assessment sampling events will occur during the last week of each month unless a Storm Runoff Monitoring event occurred that month and the Storm Runoff sampling event will double as the required sampling event for that month.

Table 1 - Repeating Three Year Cycle

	Year 1	Year 2	Year 3
Poso Creek at Highway 65	Assessment Monitoring	Core Monitoring	Core Monitoring
Poso Creek at U.S. Highway 99	Assessment Monitoring	Core Monitoring	Core Monitoring

i. Sediment Toxicity

The General Order requires sediment toxicity testing be conducted twice a year at each established monitoring station. One sampling event is to occur between August 15th and October 15th and the second sampling event is to occur between March 1st and April 30th. If there is no flow due to dry conditions during these sampling periods then it will be recorded on the Field Sheet and watershed precipitation information will be documented.

Due to potential requirements of sediment sampling, it may be necessary to perform a sample grab at an alternate location to obtain proper samples. Any variation from the specified monitoring locations will be documented and reported.

ii. Storm Runoff Monitoring

The General Order requires that sampling events occur during 2 storm runoff events per year at each monitoring station. Poso Creek is an intermittent stream and therefore the first flows detected for three consecutive days as a result of a

precipitation event but after a minimum of one month of dry conditions will be considered a storm runoff event. During periods of established continuous water flow at the monitoring stations, the precipitation within the Poso Creek watershed will be monitored along with the flows at each of the monitoring stations to determine if the secondary storm runoff event is triggered. If the flow increases by over 50% over a three day period that will be considered a storm event and a sample will be taken on the third day if necessary.

F. Monitoring Parameters

The Monitoring Parameters are used to assess the potential discharges from irrigated lands to surface waters of the State and to evaluate the effectiveness of agricultural management practices. Both field measured data and laboratory analytical data will be used for the water quality assessment. The parameters to be monitored are identified in Appendix B.

The metal parameters included are those metals that were detected as a result of the previous Assessment Monitoring year conducted at the previous Poso Creek at Zerker Road monitoring site. Laboratory results indicated a detection of each metal in year 2010 but levels did not exceed trigger limits. This site is was located on the same waterway between the two new proposed sites of this SWMP. Due to the previously detected presences of the metals, these metals are included as part of the parameters for the Assessment Monitoring.

Assessment Monitoring of the previous Ag Waiver Program monitored an extensive list of pesticide parameters. The results of the last Assessment Monitoring event in 2010 indicated there were no detections for over 30 different pesticides at the Poso Creek and Zerker Road monitoring station. The new monitoring sites will continue to monitor the same pesticide parameters as proposed in Appendix B to assess the effectiveness of agricultural practices in the CWDC area.

G. Data Management

Surface Water Data Management will be conducted according to the requirements of the General Order, Section III, C. Data will be submitted to the Regional Board in the required electronic formats using the specified templates.

Copies of all records including field sheets, chain of custody forms, laboratory reports, CWDC generated reports, will be maintained by CWDC for review and inspection.

H. Reporting & Exceedances

Quarterly and Annual Monitoring Reports and Exceedance Reports are required to be submitted by CWDC similarly to the previous requirements of the Ag Waiver Program. Reports will be submitted in accordance with the General Order, Section V.

i. Quarterly Reporting

Each quarter CWDC will submit the previous quarter's surface water monitoring results according to Table 2 below.

Table 2- Quarterly Reporting

Due Date	Reporting Period
1 March	1 October through 31 December - Previous Year
1 June	1 January through 31 March - Same Year
1 September	1 April through 30 June - Same Year
1 December	1 July through 30 September - Same Year

ii. Annual Reporting

The Annual Monitoring Report is due May 1 of each year. The Annual Report summarizes the previous year's monitoring data and is required to include many required elements that are listed in the General Order, Section V., C. Annual Report will be submitted according to General Order requirements.

iii. Exceedance Reporting

An exceedance report is required to be submitted when monitoring results show an exceedance of water quality objectives or trigger limits for a specified parameter. Exceedances must be determined within five business days of receiving laboratory reports and exceedance reports are to be emailed to a designated Regional Board staff contact the next business day after determining an exceedance.

I. Surface Water Quality Management Plans

There are no currently existing Surface Water Quality Management Plans for the CWDC area or as a result of monitoring the Poso Creek at Zerker Road Monitoring Station.

A Surface Water Quality Management Plan (SQMP) is required if during a three year period more than one exceedance of the same parameter occurs at the same monitoring location. The SQMP is developed to determine and address the source of the reported exceedances. If the requirement for a SQMP is triggered then a schedule for SMPQ development will be provided to the Regional Board. CWDC will work with the Regional Board to develop a SQMP and develop the plan to meet the requirements of the General Order and Appendix MRP-1.

III. Quality Assurance Project Plan

The Quality Assurance Project Plan (QAPP) governs the sampling and testing performed under this SWMP. Samples are collected according to the schedules and defined events of this SWMP for each monitoring site. BSK Associates (BSK) will establish water quality sampling and analysis

protocols for each monitored parameter and analytical methods. BSK Associates (BSK) will be collecting the water quality samples to fulfill the requirements of this SWMP and will follow the protocols as provided by the approved QAPP. The QAPP is provided in Appendix C.

A. Sample Collection

Sample collection includes several components to be compliant with the MRP requirements of the Order. Photo documentation and field data are required at each event which occurs on a monthly basis. Ambient water and sediment sampling only occur when water is present and flowing during a monthly event. Components of sample collection are summarized below.

i. Photo Documentation and Field Data

Photo documentation of the monitoring site will be performed at all monitoring events, regardless of the presence of flowing water. Photos will be documented with field sheets to describe the site at each monitoring event. Applicable field parameters will also be recorded regardless of the presence of flowing water. Field data includes time on site, weather observations, water and sediment characteristics, and any additional site descriptions or comments.

ii. Ambient Water

Sampling for a site generally takes several hours if water is flowing. To perform the water sampling, a specified quantity and type of bottles are filled with water from the channel based on the requirements of the analysis to be performed for a given sampling site as described in the QAPP. Collected samples must be stored at a temperature less than or equal to 4°C and must be delivered within 24 hours to the necessary laboratories or as specified by the QAPP. Holding times for different constituents will govern the order of analyses performed. All bottles for a site will be given the same sample time and date to track the different results for a site. Quality Control samples such as field duplicates and samples for matrix spike analysis will also be filled during collection and stored and transported in the same manner as the other samples. Field blanks will also be used as part of the quality control process, but these bottles will be filled with deionized water. Flow in the channel will also be measured or estimated. Further detail regarding ambient water sampling is provided in the QAPP.

iii. Sediment

Sediment samples are collected two times per year following the schedule provided in Section II, E. Samples are taken from the topmost two centimeters of channel bed substrate and placed into the containers for toxicity testing, grain size and total organic carbon (TOC) analyses. Other containers will be provided for additional sediment samples in the event any chemical analyses are necessary due to increased toxicity.

Sediment samples for chemistry and grain size and TOC are frozen within 48 hours while toxicity and grain size samples are held at 4°C until analysis begins. Further detail regarding sediment sampling is provided in the QAPP.

B. Laboratory Analysis

Analysis of samples will be handled by BSK. BSK performs most analyses in-house but subcontracts with Aquatic Bioassay and Consulting Laboratories, Inc. (ABC) for testing of water column and sediment toxicity. BSK and ABC will follow methods accepted by the Regional Board and will provide written notification if another method is to be used. The quality assurance manuals and standard operating procedures for these organizations are part of the QAPP, but are also available by contacting the laboratories directly. A summary of the analytical methods used and the trigger, reporting, and minimum detection limits are provided in the QAPP.

C. Quality Control

Quality assurance and control objectives for sample collection and laboratory analysis are described in the QAPP. These objectives describe the criteria for making sure results are correct and complete. Criteria include discussion on equipment precision and accuracy, contamination either by the sampler or equipment, and completeness. Precision and accuracy are checked through various duplicate field and lab samples to confirm validity of results. Contamination is prevented through thorough cleaning of equipment and strict adherence to monitoring protocols. Completeness is gauged based on percentage of valid result data that is produced. The goal is to have at least 90% of the data meet all quality criteria. Failure to meet any of the criteria will result in data to be flagged with the appropriate SWAMP/CEDEN flag. Data will be reviewed for completeness and flag data as appropriately. The Electronic Data Deliverable (EDD) Checklist and Online Data Checker tools provided by the Regional Board will be utilized to check data submittal format and completeness. Review of the failures may result in rejection of the data.

D. QAPP Submittal

The QAPP is required to be submitted by October 24, 2014. It's inclusion in Appendix C of this SWMP is provided to satisfy the submittal requirements of the General Order.

IV. References

A. California Department of Water Resources

B. General Order R5-2013-0120

C. Giant Sequoia National Monument Hydrology Report

D. Kern County Agricultural Commissioner's Office

E. SSJVWQC Monitoring and Reporting Plan, Conditional Water R5-2008-0005

F. USGS Water Resources

G. Water Quality Control Plan for the Tulare Lake Basin

Appendix A – Poso Creek Photographs, Taken October 2014

Poso Creek at Hwy 65 Monitoring Station

Upstream View

Downstream View

Poso Creek at Fwy 99 Monitoring Station

Upstream View

Downstream View

Appendix B - Cawelo Water District Coalition Monitoring Parameters

	Measured Parameter	Matrix	Threshold/Trigger Limit	Units	Required for Core Monitoring	Required for Assessment Monitoring
Field Measurement	Estimated Flow (cfs)	Water	> 1	cfs	X	X
	Photo Documentation	Site			X	X
	Conductivity at 25°C (µs/cm)	Water	300	µs/cm	X	X
	Temperature (°C)	Water			X	X
	pH	Water	6.5-8.3		X	X
	Dissolved Oxygen (mg/L)	Water	7	mg/L	X	X
Drinking Water	E. Coli	Water	NA		X	X
	Total Organic Carbon (TOC)	Water	NA		X	X
General Phys.	Hardness (CaCO3)	Water	NA			X
	Total Suspended Solids (TSS)	Water	NA		X	X
	Turbidity	Water	Variable	NTU	X	X
Metals	Arsenic (total)	Water	10	µg/L		X
	Boron (total)	Water	1000	µg/L		X
	Cadmium (total and dissolved)**	Water	5	µg/L		X
	Copper (total and dissolved)**	Water	1000	µg/L		X
	Lead (total and dissolved)**	Water	15	µg/L		X
	Molybdeum (total)	Water	NA	µg/L		X
	Nickel (total and dissolved) **	Water	100	µg/L		X
	Selenium (total)	Water	50	µg/L		X
	Zinc (total and dissolved)**	Water	5000	µg/L		X
Nutrients	Total Ammonia (as N)	Water	Variable		X	X
	Unionized Ammonia (calculated value)	Water	Variable		X	X
	Nitrogen, Nitrate+Nitrite	Water	10	mg/L	X	X
	Soluble Orthophosphate	Water	NA			X
Pesticides	Atrazine	Water	1	µg/L		X
	Cyanazine	Water	1	µg/L		X
	Simazine	Water	4	µg/L		X
	Methamidophos	Water	0.35	µg/L		X
	DDE	Water	0.001	µg/L		X
	DDT	Water	0.001	µg/L		X
	DDD	Water	0.001	µg/L		X
	Dicofol	Water	NA	µg/L		X
	Dieldrin	Water	0.056	µg/L		X
	Endrin	Water	2	µg/L		X
	Methoxychlor	Water	30	µg/L		X
	Bifenthrin	Water	NA	µg/L		X
	Cyfluthrin	Water	NA	µg/L		X
	Cypermethrin	Water	NA	µg/L		X
	Esfenvalerate	Water	NA	µg/L		X
	Fenpropthrin	Water	NA	µg/L		X
	Lamba cyhalothrin	Water	NA	µg/L		X
	Permethrin	Water	NA	µg/L		X
	Aldicarb	Water	3	µg/L		X
	Carbaryl	Water	2.53	µg/L		X
	Carbofuran	Water	18	µg/L		X
	Diuron	Water	2	µg/L		X
	Linuron	Water	1.4	µg/L		X
	Methiocarb	Water	5	µg/L		X
	Methomyl	Water	0.52	µg/L		X
	Oxamyl	Water	50	µg/L		X
	Azinphosmethyl	Water	0.01	µg/L		X
	Chlorpyrifos	Water	0.015	µg/L		X
	Demeton-S	Water	NA	µg/L		X
	Diazinon	Water	0.1	µg/L		X
	Dichlorvos	Water	0.085	µg/L		X
	Dimethoate	Water	1	µg/L		X
	Disulfoton	Water	0.05	µg/L		X
	Malathion	Water	0.1	µg/L		X
	Methidathion	Water	0.7	µg/L		X
	Molinate	Water	20	µg/L		X
	Parathion, methyl	Water	0.08	µg/L		X
	Phorate	Water	0.7	µg/L		X
	Phosmet	Water	140	µg/L		X
	Thiobencarb	Water	70	µg/L		X
	Glyphosate	Water	700	µg/L		X
	Paraquat	Water	3.2	µg/L		X
	Trifluralin	Water	5	µg/L		X
Water Toxicity	Ceriodaphnia dubia	Water	≥50% Mortality		X	X
	Pimephales promelas	Water	≥50% Mortality		X	X
	Selenastrum capricomutum	Water	≥50 Reduced Growth		X	X
	Toxicity Identification Evaulation	Water	Perform Phase 1 TIE within 48 hrs of exeedance			
Sediment Toxicity	Hyalella azreca	Sediment	<80% Survival			
Pesticides and Sediment Parameters*	Bifenthrin	Sediment	NA			
	Cypermethrin	Sediment	NA			
	Deltanethrin	Sediment	NA			
	Esfenvalerate/Fenvalerate	Sediment	NA			
	Fenpropthrin	Sediment	NA			
	Lamba cyhalothrin	Sediment	NA			
	Permethrin	Sediment	NA			
	Piperonyl butoxide (PBO)	Sediment	NA			
	Chlorpyrifos	Sediment	NA			
	Total Organic Carbon	Sediment	NA			
	Grain Size	Sediment	NA			

The first year of Core Monitoring must include any parameter that exceeded a water quality objective during previous assessmet period.

* For sediment samples measuring significant toxicity and < 80% organism survival compared to the control, the sediment pesiticide analysis will be performed.

** Hardness samples shall be collected when sampling for these metals